Impact of Innovation Technology and Development in Performance Evaluation

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Abstract

Modern science and technology are a "double-edged sword". On the one hand, it improved competitive sports and the constant production of new sporting products, but it also improved the training environment and its related gear, promoted movement technology, and changed the values connected to sports. On the other side, contemporary technologies have also contributed to the alienation of technology, hindered physical fitness activities, and generated flaws in competitive sports that made fair competition meaningless and resulted in a variety of unjust social concerns. Due to the complexity of the restrictions that surround player performance, particularly in team-based sports, it can be difficult to see and evaluate it. One of the main issues in this regard is the lack of standardised observing tools and the pressing necessity to create strong, computerised systems coding. All of these issues must be dealt with as a part of a plan that is suitable for situations that are common and natural. A player's on-court basketball performance during a live game in a typical and natural situation can be assessed using video analysis, notational analysis, and scouting. With a focus on performance evaluation, this essay tries to emphasise the influence of modern science and technology on sport.

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Keywords: Performance Assessment, Basketball, FIBA LIVE STAT & Modern Science and Technology

Introduction

Modern science and technological advancements are without a doubt "the first Productive force." Sports, a singular social phenomena, are now exploited as accessories for contemporary technology. Whether as a result of the increased competitiveness of sports or the improved health of athletes, sport and science and technology are closely interwoven. The fusion of modern technology with sports is referred to by the labels "Knowledge Sport," "Digital Sports," "High-Tech Olympics," and others.

It has long been a fantasy to use natural advantages and special training techniques to limit human movement. The level of competition in today's sports, particularly in high-level sport

performance, has come very near to the human species' inherent limits. The nature of sports and the environment in which athletes practise have undergone tremendous change as a result of the extensive use of modern science and technology, including computer technology, biological engineering, new materials and energy technology, information technology, and theory. This has raised the level of competitive sport and completely illustrated the variety of purposes and consequences of sports by resulting in updated training techniques and enhanced site equipment.

Performance Assessment – Team Based Sports

Basketball is one of the most popular team sports worldwide, and both men and women have played it. It has been around for a while, evolving over time and paralleling the dramatic increase in sports performance over the past 50 years. It's not new to analyse a game by observing the actions of the teams and players. In the past, analytical approaches have used the frequency of occurrence of events (such as the number of passes made in a certain area of the field or how frequently a team made mistakes) as a performance indicator. Coaches and athletes will continue to receive critical information from this study, which is based on the examination of the frequency of key performance characteristics, to help them improve their training strategies..

Basketball's intricate set of rules makes it difficult to objectify observation and analysis of the game, nevertheless. Significant challenges in this area include the existence of regularities that cannot be recognised using inference visual or conventional methods of data analysis, the absence of standardised tools for observation, and the pressing need to develop effective, computerised systems coding. A plan must incorporate people and be appropriate for regular, everyday situations. Basketball player on-court performance evaluation can be done by video analysis, notational analysis, and scouting in real-world, everyday circumstances. Basketball can be used to demonstrate a number of mathematical skills, including the recognition of geometric shapes, ability to choose the best data display and interpret that data, ability to make predictions, ability to create tally charts, scatter plots, and bar graphs, and finally the ability to convert fractions to percentages. All of these mathematical methods are applicable to the statistics that are used to evaluate the overall performance and potential performance of players.

The International Basketball Federation, better known by its French abbreviation FIBA, is a grouping of national organisations that oversees basketball competition on a global scale. It created a programme called "FIBA Live Stats" that is used to evaluate basketball players' on-court performance during competitions. These factors include field goal, two-point, three-point, and free throw basket made and missed, fouls committed and received, made offensive and defensive rebounds, made blocks, made assists, made steals, made turnovers, and performance efficiency. The aggregate of the good and negative

features of each player's movements made during the game was used to evaluate their performance.

Table – 1: Sample Box score output

No	Name	Min	Field Goals		2 Points		3 Points		Free Throws		Rebounds			AS	TO	ST	BS	Fouls		+/-	PTS
			M/A	%	M/A	%	M/A	%	M/A	%	OR	DR	TOT					PF	FD		
4	Rini L	11:14	2/7	28.6	1/2	50.0	1/5	20.0	0/0	0.0	1	0	1	5	2	2	0	0	0	1	5
5	Mohanbala.	DNP																			
*6	Chandana	33:55	5/16	31.3	1/6	16.7	4/10	40.0	0/0	0.0	3	3	6	2	1	4	0	3	1	2	14
7	Pavani	03:57	0/0	0.0	0/0	0.0	0/0	0.0	0/0	0.0	0	2	2	0	0	0	0	1	0	-2	0
*8	Mekhala	09:52	0/2	0.0	0/1	0.0	0/1	0.0	0/0	0.0	0	2	2	0	0	0	0	1	1	4	0
9	Grishma	36:37	4/13	30.8	4/8	50.0	0/5	0.0	0/1	0.0	3	1	4	6	3	2	0	1	2	3	8
*10	Loopa	35:52	4/12	33.3	4/5	80.0	0/7	0.0	1/5	20.0	3	4	7	5	3	4	1	1	3	4	9
11	Bhoomika(C)	DNP																			
12	Sahana	12:31	5/9	55.6	5/9	55.6	0/0	0.0	0/0	0.0	2	2	4	0	2	3	0	1	0	4	10
*13	Varsha	32:30	8/20	40.0	8/20	40.0	0/0	0.0	6/7	85.7	3	5	8	3	3	2	0	4	6	7	22
14	Manasa BP	DNP																			
*15	Lekana M	23:32	3/6	50.0	3/5	60.0	0/1	0.0	0/0	0.0	1	7	8	1	3	1	1	5	0	-8	6
Team/Coach											3	5	8		0			0			
Totals		200:00	31/85	36.5	26/56	46.4	5/29	17.2	7/13	53.8	19	31	50	22	17	18	2	17	13	3	74

This table indicates the entire team player overall performance in a tournament. Through this table we can get so many data about a player as well as a team. We can see how many minutes a player played in a match, Attempt Made and Missed, Foul Made and Received,, etc. it will help to a coach to improve a player as well as team performance. Opponent team data also we can get from this data. So it will help

to both team. This output data generated during the match and will distribute to the coaches end of the each quarters. So this live Data will change a lot in a Game.

Table 2. Sample Shot area output
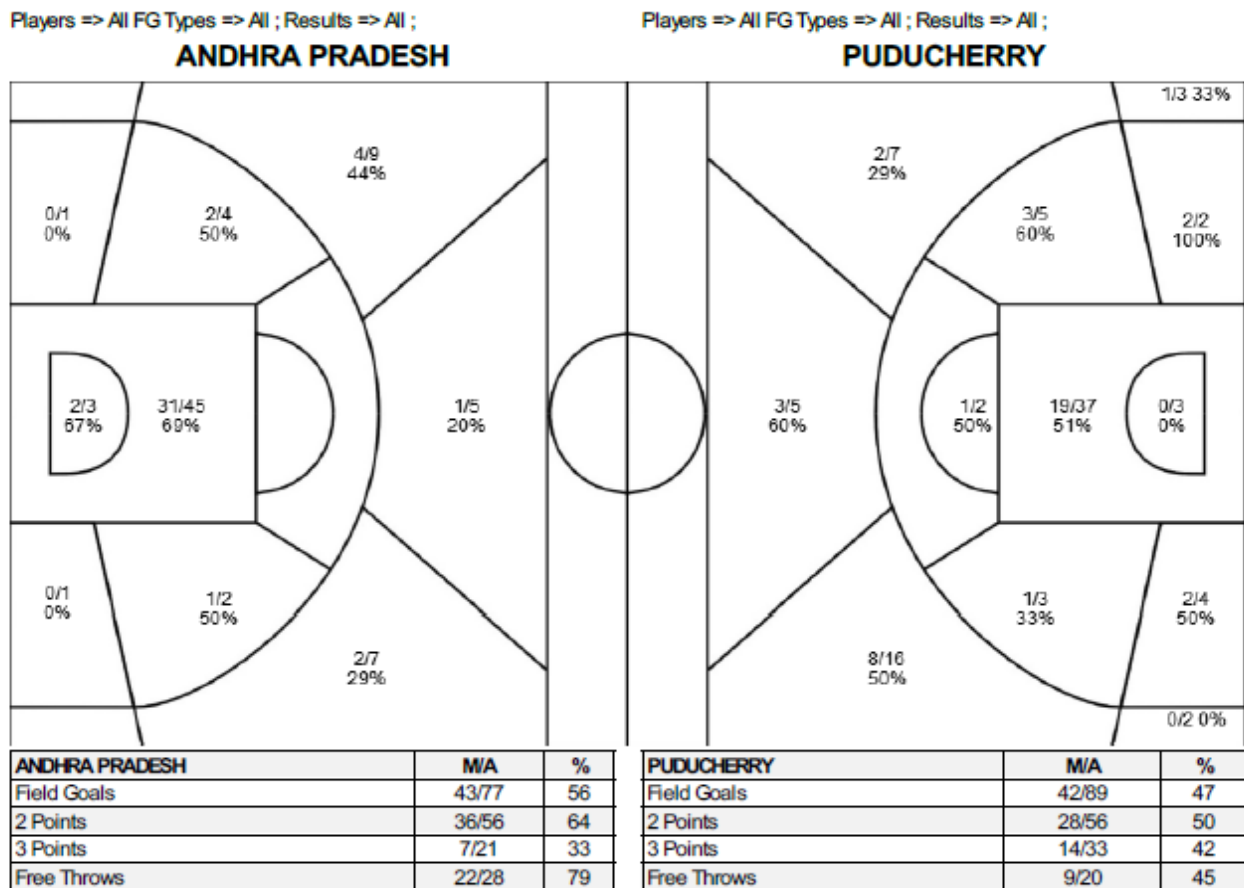
This output Shows the Shot area. That means how much shot done in an area of the court. Also we can know the successive basket and failure basket data through this output. Moreover will get the total no of basket made and attempt data also will get. Also we can get the shooting percentage in all the direction of the court. This will help the team to plan their defensive and offensive strategy.

Designing sporting goods with modern sport technology

Sporting technologies are devices designed by humans to further goals or interests in or related to a particular sport. Athletes utilise technology as a tool in sports to attempt and enhance the conditions of

their practise and competition in order to improve their overall athletic performance. It is the knowledge of how to employ specialised equipment and the most recent technologies to finish work more rapidly. A few examples of sporting technologies include golf clubs, tennis rackets, pole vault poles, athletic sports gear (clothing and footwear), advanced computer stimulations, and motion capture. Computerised Software for Sports Performance Evaluation Technologies like CAD (Computer Aided Design) can greatly enhance sporting goods. The main applications of CAD are to improve the effectiveness, comfort, and safety of specialised athletic equipment.

It offers a fantastic framework for considering and assessing novel products and ideas. Other technologies, such as "smart" equipment, can be utilised to evaluate human performance. These have sensors and computers built into them and can be used by athletes as a part of their training regimen. 'Smart' illustrations Some examples of equipment technologies include human response time and movement frequency metres, exercise stress testing and cardiovascular assessment apparatus, and devices that gauge jump and run characteristics. Modern technologies like motion capture analysis are also used in sport performance analysis.

Conclusions

Sporting performance has greatly improved during the last millennium. Even though the majority of this performance gain can be attributed to better training, diet, a drive to win, etc., it is obvious that modern designs and building materials have had a big impact on a number of sports. Athletes' strength, power, and willpower are likely more crucial in a contest like the 100-meter sprint than any technical innovation that would necessitate a change in the regulations. Height increases were significant when flexible poles were introduced to the pole vault in the 1960s. Here, improvements have been made as a result of the athlete's adaptation to the new equipment and the capabilities of the equipment. The governing bodies opted against modifying the rules to keep heights low because the equipment is accessible to all athletes.

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